ipd4200mdimgipTES-10

Defense Information Infrastructure (DII)
Common Operating Environment (COE)

Installation Procedures (IP)
for the
Imagery Database (MDIMG) Segment
of the
Tactical Environmental Support System Next Century
[TESS(NC)]
Meteorology and Oceanography (METOC) Database

Document Version 4.2

21 January 1999

Prepared for:
Naval Research Laboratory
Marine Meteorology Division
Monterey, CA

Prepared by:
Integrated Performance Decisions
Middletown, RI

Table of Contents

List of Figures

1 SCOPE

1.1 Identification

These Installation Procedures (IP) describe the installation of the Imagery Database (MDIMG) Segment, Version 4.1 series, of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorology and Oceanography (METOC) Database. The MDIMG segment provides a database for the storage and retrieval of Imagery Products. This software is designed to run under the Defense Information Infrastructure (DII) Common Operating Environment (COE) release 3.1 on a Hewlett-Packard computer running HP-UX 10.20 or a personal computer running the Microsoft Windows NT 4.0 operating system (OS) with Service Pack 3.

1.2 System Overview

The software described in this document forms a portion of the METOC Database component of the TESS(NC) Program (Navy Integrated Tactical Environmental Subsystem (NITES) Version I). On 29 October 1996, the Oceanographer of the Navy issued a TESS Program Policy statement in letter 3140 Serial 961/6U570953, modifying the Program by calling for five seamless software versions that are DII COE compliant, preferably to level 5.

The five versions are:

- NITES Version I — The local data fusion center and principal METOC analysis and forecast system (TESS(NC))
- NITES Version II — The subsystem on the Joint Maritime Command Information System (JMCIS) or Global Command and Control System (GCCS) (NITES/Joint METOC Segment (JMS))
- NITES Version III — The unclassified aviation forecast, briefing, and display subsystem tailored to Naval METOC shore activities (currently satisfied by the Meteorological Integrated Data Display System (MIDDS))
- NITES Version IV — The Portable subsystem composed of independent PCs/workstations and modules for forecaster, satellite, communications, and Integrated Command, Control, Communications, Computer, and Intelligence Surveillance Reconnaissance (IC4ISR) functions (currently the Interim Mobile Oceanographic Support System (IMOSS))
- NITES Version V — Foreign Military Sales (currently satisfied by the Allied Environmental Support System (AESS))

NITES I acquires and assimilates various METOC data for use by US Navy and Marine Corps weather forecasters and tactical planners. NITES I provides these users with METOC data, products, and applications necessary to support the warfighter in tactical operations and decision making. NITES I provides METOC data and products to NITES I and II applications, as well as non-TESS(NC) systems requiring METOC data, in a heterogeneous, networked computing environment.

The TESS(NC) Concept of Operations and system architecture require that the METOC Database be distributed both in terms of application access to METOC data and products and in terms of physical location of the data repositories. The organizational structure of the database is influenced by these requirements, and the components of this distributed database are described below.

In accordance with DII COE database concepts, the METOC Database is composed of six DII COE-compliant *shared database* segments. Associated with each shared database segment is an Application Program Interface (API) segment. The segments are arranged by data type as follows:

Data Type	**Data Segment**	**API Segment**
Grid Fields	MDGRID	MAGRID
Latitude-Longitude-Time (LLT) Observations	MDLLT	MALLT
Textual Observations and Bulletins	MDTXT	MATXT
Remotely Sensed Data	MDREM	MAREM
Imagery	MDIMG	MAIMG
Climatology Data	MDCLIM	MACLIM

A typical client-server installation is depicted in Figure 1-1 on the next page. This shows the shared database segments residing on a DII COE database server, with a NITES I or II client machine hosting the API segments. Communication between API segments and shared database segments is accomplished over the network using American National Standards Institute (ANSI)-standard Structured Query Language (SQL).

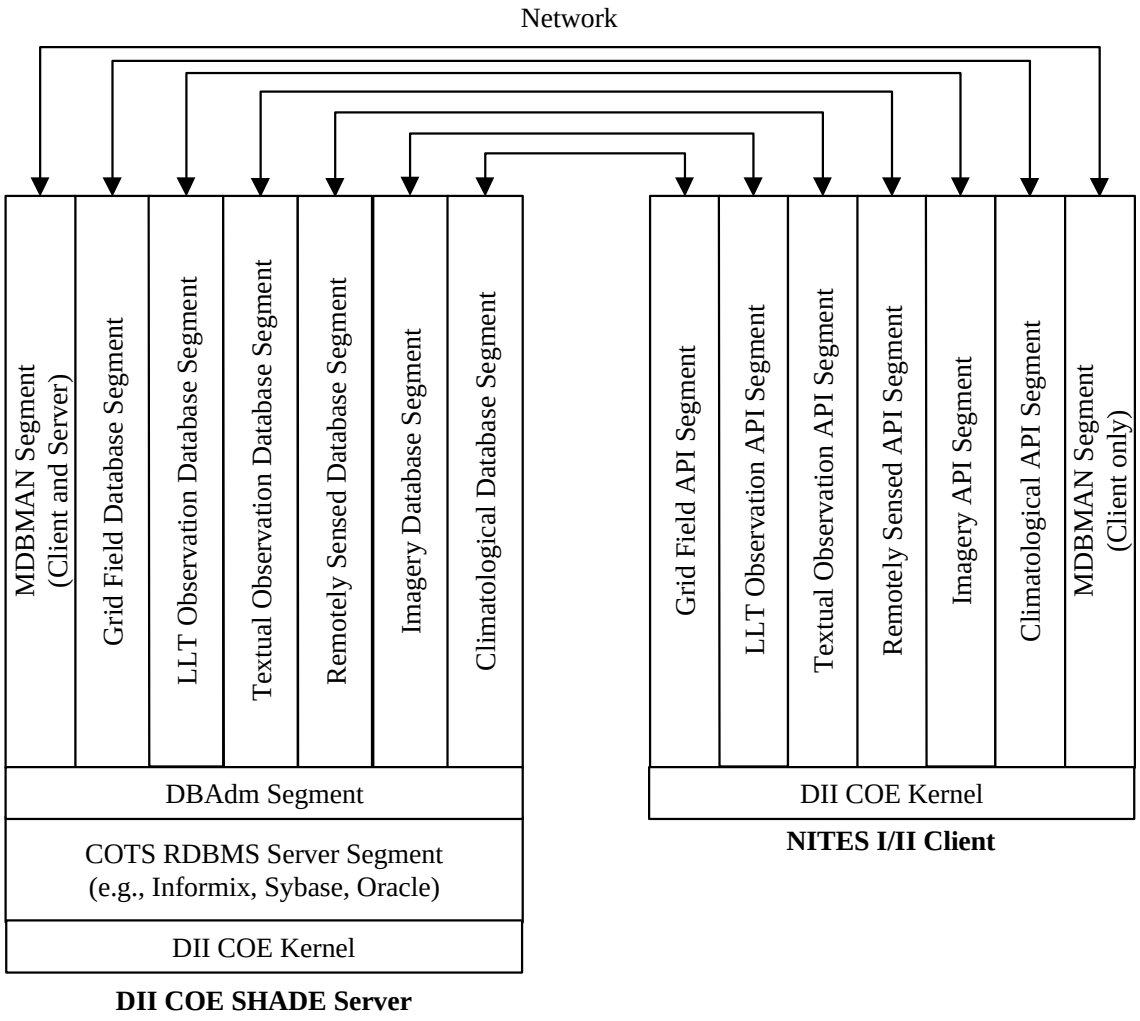

Figure 1-1. TESS(NC) METOC Database Conceptual Organization

The database in the MDIMG segment deals with imagery products. Imagery products can be associated with a specific geographic point/area, as well as time. A number of different image formats are supported; they are NITF, MIF, GIF, TIFF, BMP, JPEG, XWD, XBM, PBM, MPEG, and Other.

2 REFERENCED DOCUMENTS

2.1 Government Documents

STANDARDS

MIL-STD-498 5 December 1994	*Software Development and Documentation*

SPECIFICATIONS

Unnumbered 30 September 1997	*Software Requirements Specification for the Tactical Environmental Support System/Next Century [TESS(3)/NC] Meteorological and Oceanographic (METOC) Database,* Space and Naval Warfare Systems Command, Environmental Systems Program Office (SPAWAR PMW-185), Washington, DC
Unnumbered 5 December 1997	*Performance Specification (PS) for the Tactical Environmental Support System/Next Century TESS(NC) (AN/UMK-3)*

OTHER DOCUMENTS

DII.COE.DocReqs-5 29 April 1997	*Defense Information Infrastructure (DII) Common Operating Environment (COE) Developer Documentation Requirements, Version 1.0*
DII.3010.HP1020.KernelP1.IG-1 9 May 1997	*DII COE Kernel 3.0.1.0P1 Patch 1 for HP-UX 10.20 Installation Guide*
DII.COE31.HP10.20.CIP 23 May 1997	*DII COE V3.1 HP 10.20 Consolidated Installation Procedures*
DII.3010.HP1020.KernelP2.IG-1 30 July 1997	*DII COE Kernel 3.0.1.0P2 Patch 2 for HP-UX 10.20 Installation Guide*
DII.3010.HP1020.KernelP3.IG-1 08 August 1997	*DII COE Kernel 3.0.1.0P3 Patch 3 for HP-UX 10.20 Installation Guide*

DII.3010.HP1020.KernelP4.IG-1 27 August 1997	*DII COE Kernel 3.0.1.0P4 Patch 4 for HP-UX 10.20 Installation Guide*
Unnumbered 30 September 1997	*Database Design Description for the Tactical Environmental Support System/Next Century [TESS(3)/NC)] Meteorological and Oceanographic (METOC) Database*, Space and Naval Warfare Systems Command, Environmental Systems Program Office (SPAWAR PMW-185), Washington, DC
ipd4200maimgrmTES-10 9 October 1998	*Application Program Interface Reference Manual (APIRM) for the METOC Imagery API (MAIMG) Segment of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorology and Oceanography (METOC) Database*
ipd4200maimgpmTES-10 9 October 1998	*Programming Manual (PM) for the METOC Imagery API (MAIMG) Segment of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorology and Oceanography (METOC) Database*
ipd4200mdimgsvdTES-10 21 January 1999	*Software Version Description (SVD) for the Imagery Database (MDIMG) Segment of the Tactical Environmental Support System Next Century [TESS(NC)] Meteorology and Oceanography (METOC) Database*

2.2 Non-Government Documents

None.

3 SYSTEM ENVIRONMENT

3.1 System Requirements

3.1.1 Hardware Requirements

The MDIMG segment is hosted on the Tactical Advanced Computer, TAC-3 (HP 750/755)/ TAC-4 (HP J210).

The following configurations are recommended:

RAM: 128 MB minimum, 192 MB optimum
Disk Space: 2 GB
Swap Space: 300 MB

3.1.2 Operating System Requirements

HP-UX 10.20

3.1.3 Kernel Requirements

Kernel 3.0.1.0 with patches through P4.

3.2 System and Site Preparations

3.2.1 System Configuration

The following software must be properly installed prior to loading the MDIMG segment:

- Appropriate OS (as described above),
- Appropriate DII COE Kernel (as described above),
- DII COE Informix On-Line Dynamic Server Segment (INFXCN), version 1.0.1.1/7.23,
- DII COE DBAdm Account Group Segment version 1.1.0.0,
- DII COE DBAdmR Segment version 1.1.0.2.

3.2.2 Operating System Preparation

Information needed to prepare the OS is found in these documents:

- DII COE V3.1 HP 10.20 Consolidated Installation Procedures
- DII COE Kernel 3.0.1.0P1 Patch 1 for HP-UX 10.20 Installation Guide
- DII COE Kernel 3.0.1.0P2 Patch 2 for HP-UX 10.20 Installation Guide
- DII COE Kernel 3.0.1.0P3 Patch 3 for HP-UX 10.20 Installation Guide
- DII COE Kernel 3.0.1.0P4 Patch 4 for HP-UX 10.20 Installation Guide

3.2.3 Tape/Disk Preparation

The MDIMG segment software is delivered on a 4-mm Digital Audio Tape (DAT) cartridge for the TAC-3/TAC-4 hardware environment.

4 INSTALLATION INSTRUCTIONS

MDIMG is a component of a DII COE database system. The following procedures describe the installation of the MDIMG software.

4.1 Installation on TAC-3/TAC-4 Systems

4.1.1 Media Booting Procedures for TAC-3/TAC-4 Systems

To prepare a tape for installation:

1. Insert the tape in the DAT drive.
2. Log in as sysadmin.
3. Select the System Administration SEGMENT INSTALLER utility under the **Software** pull-down menu.
4. Select the source and click the **Read Contents** button. The contents of the tape appear in the SELECT SOFTWARE TO INSTALL portion of the SEGMENT INSTALLER window.

4.1.2 Installation Procedures for TAC-3/TAC-4 Systems

To install the MDIMG software: (NOTE: Prior to segment installation, ensure that no existing MDIMG segment is installed on the target platform. If so, select the MDIMG segment in the CURRENTLY INSTALLED SEGMENTS section of the window. Select the **Deinstall** button and follow the instructions on the screen to remove the MDIMG segment.)

1. First ensure that the OS and Kernel, with all patches, are installed. Instructions for installing the OS, Kernel, and patches are contained in the HP-UX documentation cited in Section 3.2.2.
2. Ensure that the Informix servers are **Up**. This can be checked through the dbadmin features.
3. Install the MDIMG segment from the installation tape.
   - Highlight **METOC Imagery Database Segment**.
   - Click the **Install** button.
4. The INSTALL STATUS dialog box will appear, which will give software loading status in a % format.

5. Response dialog boxes will appear and ask if "You would like to customize database size settings." If NO is selected, you will be prompted for the database size in MB. Enter the size of the database, and 1/10 of that will be dedicated to the tables and 9/10 to Binary Large Object (BLOB) space. If YES is selected, the next prompt is for the table size of the database. Enter the appropriate value. The next prompt is for the BLOB space of the database. Enter the appropriate value. The final prompt is for the BLOB page size (in KB). Enter the appropriate value.

6. An INSTALLER STATUS dialog box may appear. Enter the Informix password and click on the **OK** button. If the database is successfully created, prompts will notify the installer. Select the **OK** button to clear the prompts.

7. Once the installation is complete, the SEGMENT INSTALLER window will appear. The **METOC Imagery Database Segment** will be displayed in the CURRENTLY INSTALLED SEGMENTS section of the window.

4.2 Installation of Upgrades

Installation of upgrades will generally follow the same procedures listed above.

4.3 Installation Verification

All successfully installed segments are listed in the CURRENTLY INSTALLED SEGMENTS portion of the INSTALLER window on TAC-3/TAC-4 systems.

4.4 Initializing the Software

This section is tailored out. No initialization of the software is required.

4.5 List of Changes and Enhancements

This section is tailored out. This is an initial installation of MDIMG. Discussion of MDIMG features may be found in the MAIMG API Reference Manual and Programming Manual, cited in Section 2.

4.6 Important Considerations

This section is tailored out.

5 NOTES

5.1 Glossary of Acronyms

AESS	Allied Environmental Support System
ANSI	American National Standards Institute
API	Application Program Interface
APIRM	API Reference Manual
BLOB	Binary Large Object
COE	Common Operating Environment
DAT	Digital Audio Tape
DII	Defense Information Infrastructure
GCCS	Global Command and Control System
IC4ISR	Integrated Command, Control, Communications, Computer, and Intelligence Surveillance Reconnaissance
IMOSS	Interim Mobil Oceanographic Support System
INFXCN	Informix On-Line Dynamic Server Segment
IP	Installation Procedures
JMCIS	Joint Maritime Command Information System
JMS	Joint METOC Segment
LLT	Latitude-Longitude-Time
MAIMG	Imagery API Segment of the TESS(NC) METOC Database
MDIMG	Imagery Database Segment of the TESS(NC) METOC Database
METOC	Meteorology and Oceanography
MIDDS	Meteorological Integrated Data Display System

NITES	Navy Integrated Tactical Environmental Subsystem
OS	Operating System
PM	Programming Manual
PS	Performance Specification
SQL	Structured Query Language
SVD	Software Version Description
TESS(NC)	Tactical Environmental Support System Next Century